ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Amendment of Section 2.106 of the	)	ET Docket No. 95-18
Commission's Rules to Allocate	)	RM-7927
Spectrum at 2 GHz for Use by the	)	
Mobile-Satellite Service	)	

To: The Commission

COMMENTS OF TRW INC.

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SUMMARY

TRW Inc. ("TRW") opposes the Commission's plan to impose the large and onerous cost of relocating the Broadcast Auxiliary Services ("BAS") and the Fixed Microwave Services ("FS") on MSS satellite system licensees as the price for using the 2 GHz bands, and questions the possibility of allocating such costs fairly among MSS licensees.

While any technical conflicts resulting from the 2 GHz allocations that TRW previously proposed for MSS may have been resolvable through BAS use of more spectrum-efficient technology, the Commission's proposal requires additional and multiple relocations that would be prohibitively expensive. The disruptive impact of these relocations is magnified substantially by the Commission's recent domestic allocation of the regional and global MSS allotment at 1970-1990 MHz to the terrestrial broadband personal communications services ("PCS"). Under the "involuntary relocation policy" that the Commission established in its Emerging Technologies proceeding, it is therefore PCS that should pay the bulk of the cost of the relocations -- if they are to be required at all.

The Commission has yet to examine the many difficulties and complications inherent in apportioning these relocation costs among the licensees of any service. TRW urges the Commission to take the more prudent approach of allowing sufficient time for the BAS to adopt new technologies that may reduce or entirely

eliminate the cost of relocating that service before permitting MSS licensees to operate in the 2 GHz bands.

TRW also strongly opposes the Commission's proposal to employ competitive bidding to award MSS licenses in the 2 GHz bands. Not only is this proposal premature; the Commission is also barred by the Communications Act from employing competitive bidding to award a license unless mutually exclusive applications have been accepted for filing, and it has not yet accepted for filing any applications to provide 2 GHz MSS. Any need to auction 2 GHz spectrum for MSS may yet be obviated if the Commission specifies a modulation technique that enables multiple systems to share the available spectrum.

In any event, numerous problems would attend the bidding out of spectrum where later applicants may seek to use the same bands, or where foreign satellite systems may operate in neighboring countries in such a way as to interfere with MSS use of the bands within the United States. Of even more grave concern is the likelihood that foreign nations will follow the lead of the United States and auction off access to the 2 GHz spectrum in their own countries. This result would drastically raise the cost of providing global MSS to the point where it would become economically unviable.

TRW also proposes herein certain technical requirements to promote the most efficient use of the 2 GHz MSS bands and to maximize the possibility of meaningful competition in those bands.

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TRW Inc. ("TRW"),[1/] by its attorneys and pursuant to Sections 1.415 and 1.419 of the Commission's rules, hereby comments on the Commission's Notice of Proposed Rule Making (ET Docket No. 95-18), FCC 95-39 (released Jan. 31, 1995) (the "NPRM") in the above-captioned proceeding. TRW disagrees with the Commission's proposal to impose the substantial and burdensome cost of relocating existing services on MSS satellite system licensees as the price for using the 2 GHz bands. TRW also questions whether the Commission's proposal would properly

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1/ TRW has been licensed to construct, launch and operate a satellite system that will operate on a global basis in the new Mobile Satellite Service Above 1 GHz. See TRW Inc. (Order and Authorization), File Nos. 20-DSS-P-91(12), CSS-91-015, 17-SAT-LA-95, 18-SAT-AMEND-95 (DA 95-130) (released Jan. 31, 1995).

and fairly apportion the cost of such relocations among MSS licensees.

The allocations for MSS that TRW proposed in its Petition for Rule Making[2/] -- allocations consistent with the international and regional allocations made at the International Telecommunications Union's 1992 World Administrative Radio Conference ("WARC-92") -- would have overlapped by 20 MHz with Broadcast Auxiliary Services ("BAS") operations in the 2 GHz bands. TRW believes that technical conflicts from this overlap may have been resolvable through BAS use of more spectrum-efficient technology. Now, however, the Commission proposes to make a smaller amount of spectrum available for MSS in slightly different frequency bands. As a result, the Commission's proposal requires the relocation of a 35 MHz segment of BAS operations within the 2 GHz bands; the proposal also requires the displacement of the operations of the Fixed Microwave Services ("FS") in the 2110-2145 MHz and 2160-2195 MHz bands. Preliminary discussions between prospective MSS operators in the 2 GHz bands and incumbent terrestrial systems reveal that the price tag for the contemplated relocations would be prohibitively expensive.

2/ Petition for Rule Making (RM-7927) (filed Dec. 8, 1993) ("TRW Petition").

Quite apart from the disruption that the Commission's proposal would cause to existing services, TRW disagrees with its plan to charge MSS licensees for the entire cost of the relocations described in the NPRM. It is the terrestrial broadband personal communications service ("PCS") that should pay the bulk of these expenses, as the need for multiple relocations results primarily from the Commission's recent domestic allocation of the regional and global MSS allotment at 1970-1990 MHz to PCS.[3/] Furthermore, the Commission has yet to examine the numerous problems and complications involved in apportioning these relocation costs among the licensees of any service. TRW urges the Commission to take the more prudent approach of allowing sufficient time for the BAS to adopt new technologies that may reduce or entirely eliminate the cost of relocating that service before permitting MSS licensees to operate in the 2 GHz bands.

TRW also opposes as premature the Commission's proposal to employ competitive bidding to award MSS licenses in these bands. The Commission is barred by the Communications Act of 1934, as amended (the "Act") from employing competitive bidding to award a

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3/ See NPRM, FCC 95-39, slip op. at ¶ 2.

license unless mutually exclusive applications have been accepted for filing. The Commission has not yet accepted for filing any applications to provide 2 GHz MSS. Nor has the Commission decided whether it will specify a particular access technology for the subject bands. It is possible that modulation techniques that enable multiple systems to share spectrum will be required.

In any event, the Commission has not yet begun to examine the numerous problems raised by bidding out spectrum where later applicants may seek to make use of the same bands, or where foreign satellite systems may engage in operations in neighboring countries that interfere with MSS use of the bands within the United States. Nor has the Commission examined the complex interrelationship between these prospective occurrences and the proposed relocation obligations. Of still graver concern with respect to the proposed use of competitive bidding is the likelihood that foreign nations will follow the lead of the United States and auction off access to the 2 GHz MSS spectrum in their own countries. Such a result would drastically raise the cost of providing global MSS to the point where it would become economically unviable.

Finally, in the interests of promoting the most efficient use of the 2 GHz MSS bands and maximizing the prospects for

meaningful competition, the Commission should decide that MSS licensees making use of any additional spectrum allocated for MSS (other than feederlink spectrum) will: 1) be required to offer global service; 2) be permitted to employ Low Earth Orbit ("LEO"), Medium Earth Orbit ("MEO") or Geostationary Orbit ("GSO") satellite systems; 3) be required to use CDMA modulation techniques; and 4) be required to limit emissions from their space stations so as to produce a power flux density ("pfd") level at the Earth's surface of not more than -137 dB(W/m²/4kHz).

I. The Commission Cannot And Should Not Require MSS Licensees To Pay The Entire Cost Of Relocating The BAS And FS.

The Commission proposes to finance the relocation of BAS and FS operations under its plan by means of the "involuntary relocation policy" that it applied in its Emerging Technologies proceeding.[4/] Under the dictates of that policy, the Commission asserts, "[a]ll relocation expenses would be paid entirely by the displacing MSS provider," including "all

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4/ See NPRM, FCC 95-39, slip op. at ¶ 11 (citing Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies (Second Report and Order), 8 FCC Rcd 6495 (1993)).

engineering, equipment, and site costs and FCC fees, as well as any reasonable additional costs."[5/]

In fact, the imposition of such a requirement solely on MSS licensees would be inconsistent with the Commission's involuntary relocation policy and grossly unfair, as PCS is one of the principal beneficiaries of the relocations that the Commission proposes. Furthermore, the imposition of the full cost of relocating the BAS and FS on MSS would very likely discourage MSS system operators from seeking licenses in the 2 GHz bands.

In TRW's view, the Commission would do better to adopt a more measured approach that would allow the BAS adequate time to adopt new technologies that may reduce or eliminate the cost of relocating that service and the FS within the 2 GHz bands. If any relocation costs are to be imposed on MSS licensees, the Commission must first determine how to distribute the burden of

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5/ NPRM, FCC 95-39, slip op. at ¶ 11. The Commission also proposes that relocation facilities be fully comparable to those being replaced; that all activities necessary for placing the new facilities into operation, including engineering and frequency coordination, be completed before relocation; that the new communications systems be fully built and tested before the relocation commences; and that, should the new facilities, within one year, prove not to be equivalent in every respect to the relocated facilities, the displacing MSS provider pay yet again to move the relocated operation to its original facilities until complete equivalency is attained. See id.

those costs equitably among systems (domestic and foreign) that plan to use the 2 GHz bands in the United States. Finally, the Commission must accord any party that must pay any relocation costs for the BAS and FS the same assistance in negotiating relocation agreements that it provided to displacing service providers in its Emerging Technologies proceeding.

a. It Is PCS, And Not MSS, That Should Be Required To Pay The Bulk Of The Cost Of Relocating The BAS And FS.

In the TRW Petition, TRW urged the Commission to allocate the 1970-2010 MHz band (Earth-to-Space) and the 2160-2200 MHz band (space-to-Earth) for MSS use in accordance with the MSS allocations made at WARC-92.[6/] While TRW's proposed allocations would have overlapped with BAS electronic news gathering ("ENG") operations in the 1990-2010 MHz band -- a 20 MHz segment -- TRW anticipated that the BAS would be able to take advantage of emerging digital technology so as to confine its operations to the 2010-2110 MHz bands without requiring the dislocation of other existing services or incurring inordinate

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6/ See TRW Petition at 1,3,7,8.

relocation costs.[7/] TRW had also anticipated that the MSS could share the 2160-2200 MHz band with the FS through the establishment of pfd thresholds for MSS downlink operations. TRW's plan would have made a total of 80 MHz available for MSS use in the 2 GHz bands.

In 1994, however, the Commission allocated the 1850-1990 MHz bands for use by PCS.[8/] Because the PCS allocation overlaps in the 1970-1990 MHz band with the previously established WARC-92 allocation for MSS uplink operations, the Commission now sees the need to seek an allocation for MSS in the 1990-2025 MHz band currently used by the BAS merely in order to obtain a total of

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7/ TRW is aware of no studies demonstrating that MSS systems employing either CDMA or TDMA/FDMA access technology can share frequencies with BAS operations on any extensive basis. The Association for Maximum Service Television, Inc. ("MSTV"), too, has asserted to the Commission that it is aware of "no evidence demonstrating that sharing between broadcast auxiliary operations and MSS would even be feasible." Reply to Comments On Petitions for Reconsideration of Association for Maximum Service Television, Inc., GN Docket No. 90-314 (Jan. 13, 1994), at 4. But see infra n.11. TRW wishes to note that, in the event that CDMA systems and no other systems should ultimately prove capable of sharing frequencies with BAS operations, the Commission may not require the two services to co-exist in certain bands while setting aside non-shared MSS bands exclusively for FDMA/TDMA use. If fair competition among MSS systems is to be preserved, each must have equal access to spectrum free and clear of potential interference.

8/ See NPRM, FCC 95-39, slip op. at ¶ 2.

70 MHz for MSS in the 2 GHz bands. The Commission therefore proposes the costly relocation of BAS operations from the 1990-2025 MHz band to the 2110-2145 MHz band, a change which requires the additional relocation of the linked FS bands at 2110-2145 MHz and 2160-2195 MHz.

In short, it is primarily the presence of PCS in the 1970-1990 MHz band that has prompted the Commission to propose the relocation of BAS and FS operations in the 2 GHz bands. Under the Commission's involuntary relocation policy, it is the initial displacing service provider that must pay the cost of relocating incumbent entities.[9/] It is therefore PCS, and not MSS licensees, that should pay the bulk of any expenses incurred in relocating the BAS and FS.[10/]

9/ See id. at ¶ 11.

10/ The Commission is incorrect in suggesting that the presence of MSS in the 2165-2200 MHz band would necessarily require the displacement of FS operations in that band and the linked 2115-2150 MHz band regardless of whether or not the BAS were required to relocate. See id. at ¶ 12. As TRW indicated above, it may be possible for MSS systems to share frequencies with the FS by means of establishing pfd thresholds for MSS downlink operations.

b. The Imposition Of All Relocation Costs For The BAS And FS On MSS Will Discourage MSS System Operators From Using The 2 GHz Bands At All.

Even if there were justification for imposing the full cost of relocating the BAS and FS on the MSS, the impact of that cost is likely to preclude exploitation of the 2 GHz bands. At a meeting of the IWG-3 Ad Hoc Sub-Working Group on 2 GHz MSS Transition Issues on February 10, 1995, representatives of the FS estimated that the cost of relocating the FS alone could be $3 billion under the Commission's plan. The total cost of relocating the BAS as well as the FS is likely to be astronomical.

The threat of such huge costs -- i.e., above and beyond the already enormous expenditures required up front to construct, launch and operate a satellite constellation -- is certain to discourage, if not dissuade, satellite system operators from seeking authority to operate in the 2 GHz bands at all. Thus, by seeking to place the full burden of relocating the BAS and FS on MSS licensees, the Commission would render its MSS 2 GHz allocation useless.

c. The Commission Should Employ A More Measured Approach That Allows Time For The BAS To Adopt A More Spectrum-Efficient Technology.

The Commission may be able to avoid burdening any service with the cost of relocating the BAS and FS simply by adopting a more measured and deliberate approach that gives the BAS sufficient time to shift to a more spectrum-efficient technology. Such an approach would be in keeping with a more realistic timetable for completion of the instant proceeding, and for the construction and launch of U.S. MSS systems.

It appears that the seven separate ENG channels currently used by the BAS in the 1990-2110 MHz bands may, through the use of digital technology, be rechannelized from their current 17 MHz widths to 12 MHz widths and moved to other bands. The BAS is likely to adopt digital technology of its own accord in the near future, in order to keep broadcast picture quality competitive with that of the cable and DBS services.[11/] By merely allowing sufficient time for the BAS to adopt this new technology, the

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11/ There are reasons to believe that band sharing on this limited and temporary basis may be possible between the BAS and MSS. For example, while the heaviest use of the subject bands by the BAS is in metropolitan areas, the heaviest use of those bands by the MSS will be in rural locations.

Commission may be able to reduce or eliminate the cost of relocating the BAS and the FS.

TRW notes that the United States has reserved the right to permit MSS operations in the 2 GHz bands in 1996 -- nine years before the rest of the world.[12/] In spite of the Commission's good intentions, however, it appears unlikely that the complex matters discussed herein can be resolved quickly enough to take advantage of the acceleration in implementation dates that the United States carved out for itself. Rather, if the history of other satellite services offers any indication, several years will elapse as the Commission grapples with the issues in the instant rulemaking proceeding, participates in the upcoming WRC and any additional international negotiations, commences and completes the necessary licensing proceeding for 2 GHz MSS applicants, and waits while the licensees construct and launch their satellite systems. Moreover, the international community is unlikely to view an early effective date for U.S. 2 GHz MSS in a favorable light. Resolution of the key issues must take

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12/ See ITU, Final Acts of the World Administrative Radio Conference (WARC-92), Malaga-Torremolinos (1992), at RR 746C.

precedence over any rush to implement a U.S. - only allocation for what will be a global service.

d. It Is Unclear How The Commission Can Distribute The Burden Of Any Relocation Costs Among First-Round U.S. And Foreign Applicants For MSS Licenses And Any Subsequent Applicants.

If it is to impose any costs at all on MSS licensees for relocating the BAS and FS, the Commission must first determine how to distribute the burden of those costs equitably among MSS licensees (domestic and foreign) using or seeking to use the 2 GHz bands in the United States. It would plainly be unfair, for example, to require all first-round MSS licensees to pay the cost of relocating the BAS and FS without charging parties that are licensed later in time to provide MSS in the same bands.[13/]

13/ The Commission's practice has been to accept second-round MSS applications to the extent that spectrum remains unused or available for sharing. See Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands, 9 FCC Rcd 5936, 5960 (1994) ("Big LEO Report and Order") (stating, in discussion of alternative divisions of available spectrum, that "[w]e do not think it is advisable at this time to preclude new entrants from access to this band."); Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service, 8 FCC Rcd 8450, 8455 (1993) (Report and Order) (observing that "[s]ome unassigned NVNG spectrum remains available under the applicants' sharing proposal, additional allocated spectrum should become available for use in 1997 and beyond, and the (continued...)

Nevertheless, the Commission has no way of anticipating how many parties might ultimately seek to provide MSS in the 2 GHz bands, and thus no way of deciding how to apportion the relocation costs. A similarly inequitable situation will arise unless foreign MSS licensees that seek to provide service in the United States are also charged their proportionate share for such access.

The difficulty of apportioning relocation costs will arise whether the Commission requires MSS licensees to employ FDMA/TDMA or CDMA access technology. If the Commission licenses only FDMA/TDMA satellite systems to use discrete 2 GHz band segments, the Commission will either have to warehouse spectrum -- an extremely inefficient use of a valuable resource -- or allocate wide bands to early licensees and permit subsequent applicants to displace them. If it elects the latter approach, the Commission must determine how it will compensate early licensees for relocation payments they have made when a subsequent licensee comes to occupy the bands to which the payments applied.

13/ (...continued)
majority of the spectrum that will be non-exclusively assigned to licensees can be used by future licensees as well.").

If the Commission permits the operation of CDMA systems in the 2 GHz bands, it is all the more likely that numerous parties will seek licenses to provide service. As more than one CDMA satellite system can share the same band, the Commission will need to find some way to reimburse an early licensee in a particular band for any relocation costs that it has paid when subsequent licensees begin to make use of that same band.

The Commission must also establish criteria by which to apportion any cost of relocating the BAS and FS among MSS operators. It would seem unjustifiable, for example, to charge all system operators an equal sum regardless of their respective systems' frequency requirements, capacity or power. At the same time, however, it is unclear how the Commission can employ such criteria to apportion relocation costs until it has been presented with all applications for MSS systems in the 2 GHz bands.

However the Commission decides to apportion any relocation costs among domestic MSS licensees in the 2 GHz bands, it certainly must require that any foreign MSS system making use of those bands pay its fair share of the relocation costs. Any failure to require such payments of foreign MSS systems would automatically put U.S. MSS system licensees at a competitive

disadvantage with foreign systems that seek to use the same spectrum to serve the same customer base. There appears, however, to be no good way for the Commission to predict when, if or how foreign MSS systems may ultimately try to provide service within U.S. borders, and how to apportion the cost of relocating the BAS and FS among them and U.S. MSS licensees.

e. Any Party Responsible For Relocation Costs Must Be Granted Assistance In Negotiating Relocation Agreements With The BAS And FS.

Regardless of how the Commission may decide to apportion responsibility for the cost of relocating the BAS and FS among PCS and domestic or foreign MSS licensees, it may not, without more, simply charge PCS or MSS licensees for those costs. In invoking the involuntary relocation policy that it used in the Emerging Technologies proceeding,[14/] the Commission neglects to note that it permitted licensees of services using new technologies in that proceeding to seek the involuntary relocation of incumbent licensees in the 2 GHz bands only where the parties were unable to negotiate voluntary relocation agreements over designated voluntary and mandatory negotiation

14/ See NPRM, FCC 95-39, slip op. at nn. 15, 16.

periods lasting between one and five years.[15/] As an incentive to enter into such voluntary agreements, the Commission also authorized the grant of tax certificates to incumbent fixed microwave licensees for any sale or exchange of property in connection with voluntary relocation agreements concluded during the relevant negotiation period.[16/] These incentives are likely to have substantially reduced relocation costs for new technology licensees.

Like the Emerging Technologies proceeding, the instant proceeding involves the relocation of incumbent service providers from the 2 GHz bands for the benefit of new and promising technologies. Consequently, any party that may have to bear the cost of relocating the BAS or FS must, at a minimum, be afforded the same assistance in negotiating relocation agreements with

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15/ See Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies (First Report and Order and Third Notice of Proposed Rule Making), 7 FCC Rcd 6886, 6890-91 (1992); Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies (Third Report and Order and Memorandum Opinion and Order), 8 FCC Rcd 6589, 6591-6601 (1993).

16/ See Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies (Memorandum Opinion and Order (Proceeding Terminated)), 9 FCC Rcd 1943, 1943-44, 1949 (1994).

those services that was afforded to new licensees in the Emerging Technologies proceeding.

II. The Commission's Proposal To Award 2 GHz MSS Licenses Via Competitive Bidding Is Premature And Fundamentally Misguided.

Whatever allocation the Commission ultimately makes for MSS in the 2 GHz bands, TRW strongly opposes its proposal to employ competitive bidding to award 2 GHz MSS licenses.[17/] Consideration of the use of auctions for such purposes is premature at this time. Furthermore, the use of auctions to award MSS licenses presents a variety of seemingly unresolvable practical dilemmas, and would be disastrous in any event for the emerging U.S. MSS industry.

Under the Act, the Commission may only grant a license by means of competitive bidding if mutually exclusive applications for an initial license or construction permit have been accepted for filing.[18/] No applications have yet been placed on Public

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17/ See NPRM, FCC 95-39, slip op. at ¶ 17.

18/ See 47 U.S.C. § 309(j)(1); NPRM, FCC 95-39, slip op. at ¶ 17. Section 309(j)(1) states, in pertinent part:

> If mutually exclusive applications are accepted for filing for any initial license or construction permit (continued...)

Notice for MSS use of the 2 GHz MSS bands. Furthermore, as TRW has previously observed, the Commission is also required to use all traditional means at its disposal to avoid mutual exclusivity that could lead to spectrum auctions in any service, including the MSS.[19/] The House Report accompanying the legislation that authorized the Commission to conduct spectrum auctions stated clearly that, "[i]n connection with application and license proceedings, the Commission should, in the public interest, continue to use engineering solutions, negotiation, threshold qualifications, service rules, and other means in order to avoid mutual exclusivity."[20/] The House Report encouraged the Commission to "avoid mutually exclusive situations, as it is in

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18/ (...continued)

> which will involve a use of the electromagnetic spectrum described in paragraph (2), then the Commission shall have the authority, subject to paragraph (10), to grant such a license or permit to a qualified applicant through the use of a system of competitive bidding that meets the requirements of this subsection.

47 U.S.C. § 309(j)(1) (emphasis added).

19/ See Comments of TRW Inc. (CC Docket No. 92-166), 83-84 (filed May 5, 1994) ("TRW MSS Above 1 GHz Comments").

20/ H.R. Rep. 111, 103rd Cong., 1st Sess. 258-59 (1993), reprinted in U.S.C.C.A.N. 378, 585-86 ("House Report").

the public interest to do so," and referred specifically to the MSS Above 1 GHz proceeding as a "case in point."[21/]

Furthermore, the Commission has yet to decide whether to impose a requirement that MSS system licensees employ a particular modulation technique. As CDMA modulation permits more than one MSS system to share the same bands, it may be that a Commission decision to require or permit the use of CDMA modulation techniques will avoid or eliminate mutual exclusivity among applicants to provide MSS in the 2 GHz bands. In such a case, the Communications Act would bar the Commission from employing competitive bidding to award licenses.

Even if the Commission could choose now to employ competitive bidding for 2 GHz MSS, it would still have to come to grips with the intractable problems inherent in the process or auctioning spectrum for global satellite systems. For example, while the Commission might succeed at bidding out spectrum to the first round of 2 GHz MSS applicants, it is unclear by what means it would make 2 GHz spectrum available to later applicants that seek either to share the bands through the use of CDMA access technology or to displace previous licensees with FDMA/TDMA

21/ Id.

systems. While it would obviously be unfair to grant later applicants free use of spectrum for which existing licensees paid dearly, it is not immediately obvious what a later applicant should be charged for sharing previously licensed spectrum or for displacing an MSS system from only a portion of the band which it was licensed to use. Certainly, the auction value of spectrum at the time a first round of applicants bids may be different from that at the time subsequent applications are filed.

Should the Commission choose, however misguidedly, to auction 2 GHz MSS spectrum, it would have to require foreign MSS systems to bid for any such spectrum that they wish to use as well. As in the case of the apportionment of the cost of relocating the BAS and FS, it would be unfair in the extreme to charge U.S. MSS licensees for the use of spectrum that their foreign competitors could use at little or no cost.

The global nature of MSS would further complicate the Commission's use of competitive bidding to award 2 GHz MSS licenses. Despite the fact that MSS applicants would be required to pay large sums to gain access to the 2 GHz bands within the United States, foreign MSS systems operating in neighboring countries may subsequently obtain, through international coordination, the right to operate in a manner which would cause